## REMARKS

In the Office Action, the Examiner rejected claims 69-80 and 84-99, and objected to claims 81-83. However, the Examiner also indicated that claims 81-83 would be allowable if rewritten in independent form. By the present response, the Applicants hereby add new claims 100-105 to further specify features of the claimed subject matter. These claims do not add any new matter. The Applicants respectfully request reconsideration and allowance of all pending claims.

### Claim Objections

Applicants thank the Examiner for pointing out the informalities in claim 99. Claim 99 has been amended to overcome these informalities. In view of the amendment, the Applicants respectfully request the Examiner to withdraw the objection of claim 99.

### Rejections Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 69-72, 79, 80, 84, 86, 88, 93-96 and 99 under 35 U.S.C. § 102(b) as anticipated by Hori et al. (U.S. Patent No. 5,494,179, hereinafter designated as "Hori"). Applicants respectfully traverse this rejection.

***Legal Precedent***

First, the pending claims must be given an interpretation that is reasonable and consistent with the *specification. See In re Prater*, 415 F.2d 1393, 1404-05, 162 U.S.P.Q. 541, 550-51 (C.C.P.A. 1969) (emphasis added); *see also In re Morris,* 127 F.3d 1048, 1054-55, 44 U.S.P.Q.2d 1023, 1027-28 (Fed. Cir. 1997); *see also* M.P.E.P. §§ 608.01(o) and 2111. Indeed, the specification is "the primary basis for construing the claims." *See Phillips v. AWH Corp.*, No. 03-1269, -1286, at 13-16 (Fed. Cir. July 12, 2005) (*en banc*).

One should rely *heavily* on the written description for guidance as to the meaning of the claims. *See id.*

Second, interpretation of the claims must also be consistent with the interpretation that *one of ordinary skill in the art* would reach. *See In re Cortright*, 165 F.3d 1353, 1359, 49 U.S.P.Q.2d 1464, 1468 (Fed. Cir. 1999); M.P.E.P. § 2111. "The inquiry into how a person of ordinary skill in the art understands a claim term provides an objective baseline from which to begin claim interpretation." *See Collegenet, Inc. v. ApplyYourself, Inc.*, No. 04-1202, -1222, 1251, at 8-9 (Fed. Cir. August 2, 2005) (quoting *Phillips*, No. 03-1269, -1286, at 16). The Federal Circuit has made clear that derivation of a claim term must be based on "usage in the ordinary and accustomed meaning of the words amongst artisans of ordinary skill in the relevant art." *See id.*

Third, anticipation under section 102 can be found only if a single reference shows exactly what is claimed. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 227 U.S.P.Q. 773 (Fed. Cir. 1985). For a prior art reference to anticipate under section 102, every element of the claimed invention must be identically shown in a single reference. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990). To maintain a proper rejection under section 102, a single reference must teach each and every limitation of the rejected claim. *Atlas Powder v. E.I. du Pont*, 750 F.2d 1569 (Fed. Cir. 1984). Accordingly, the Applicants need only point to a single element not found in the cited reference to demonstrate that the cited reference fails to anticipate the claimed subject matter. The prior art reference also must show the *identical* invention "*in as complete detail as contained in the ... claim*" to support a *prima facie* case of anticipation. *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 U.S.P.Q. 2d 1913, 1920 (Fed. Cir. 1989).

Fourth, if the Examiner relies on a theory of inherency, the extrinsic evidence must make clear that the missing descriptive matter is *necessarily* present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. *In re Robertson,* 169 F.3d 743, 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999) (Emphasis Added). The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. *Id.* In relying upon the theory of inherency, the Examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic *necessarily* flows from the teachings of the applied prior art. *Ex parte Levy,* 17 U.S.P.Q.2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The Examiner, in presenting the inherency argument, bears the evidentiary burden and must adequately satisfy this burden. *See id.* Regarding functional limitations, the Examiner must evaluate and consider the functional limitation, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. *See* M.P.E.P. § 2173.05(g); *In re Swinehart*, 169 U.S.P.Q. 226, 229 (C.C.P.A. 1971); *In re Schreiber*, 44 U.S.P.Q.2d 1429, 1432 (Fed. Cir. 1997). If the Examiner believes the functional limitation to be inherent in the cited reference, then the Examiner "must provide some evidence or scientific reasoning to establish the reasonableness of the examiner's belief that the functional limitation is an inherent characteristic of the prior art." *Ex parte Skinner,* 2 U.S.P.Q.2d 1788, 1789 (Bd. Pat. App. & Inter. 1986).

***Features of Independent Claims 69 and 94 Omitted from Hori***

Turning to the claims, the present independent claims 69 and 94 recite, *inter alia*, "a *porous* layer having a surface and a predetermined thickness disposed adjacent to the surface of the substrate, wherein the porous layer *defines* a plurality of substantially cylindrical channels, ... [and] a plurality of substantially rod-shaped structures disposed within at least a portion of the plurality of substantially cylindrical channels *defined by* the porous layer ..., wherein a portion of each of the plurality of substantially rod-shaped structures *protrudes above* the surface of the porous layer."

First, the cited reference fails to teach or suggest "a *porous* layer having a surface and a predetermined thickness disposed *adjacent* to the surface of the substrate, wherein the porous layer *defines* a plurality of substantially cylindrical channels" as recited by independent claims 69 and 94. In sharp contrast, Hori discloses an oxide layer 130 formed by thermal oxidation *of the top* (not adjacent to the surface) of the silicon substrate 121. *See* Hori, FIG. 8(f), col. 11, lines 36-39 (emphasis added). In addition, Hori is silent about the porosity of the oxide layer 130. Moreover, the oxide layer 130 of Hori does not define a plurality of substantially cylindrical channels. *See* Hori '179, FIG. 8(f); col. 11, lines 36-40. Instead, as shown in FIG. 8(f), the oxide layer 130 is merely oxidation of the entire outer portion of the substrate 121 and the structure 125'. In view of these deficiencies, among others, Hori cannot anticipate independent claims 69 and 94 and their dependent claims.

Second, the cited reference fails to teach or suggest "a plurality of substantially rod-shaped structures *disposed within* at least a portion of the plurality of substantially cylindrical channels *defined by* the porous layer, wherein a portion of each of the plurality of substantially rod-shaped structures *protrudes above* the surface of the porous layer" as recited by independent claims 69 and 94. In sharp contrast, Hori discloses "thermal oxidation of the top of the silicon substrate 121 and the surfaces of the structure 125', including the wall of the cylindrical structure 129 and the surfaces of the conical structures 126-128." Hori, FIG. 8(f), col. 11, lines 36-39 (emphasis added). Referring to FIG. 8(h), Hori discloses "by etching off the oxide layer 130, the upper minute conical structure together with insulation film 132' and the metal film 133' thereon are removed, resulting in the formation of a cathode 131." Hori, FIG. 8(h), col. 11, lines 51-54 (emphasis added). As a result, Hori fails to teach or suggest the foregoing claim features. In view of these deficiencies, among others, Hori cannot anticipate independent claims 69 and 94 and its dependent claims.

**Rejections Under 35 U.S.C. § 103(a)**

Claims 73, 76 and 87 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hori. Claims 74, 75, 77 and 78 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hori and further in view of Iwasaki et al. (U.S. Patent No. 6,278,231). Hori was further combined with Takai et al. (U.S. Patent No. 6,911,767) to reject claims 89, 91 and 92. Claim 90 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Hori and further in view of Choi et. al. (U.S. Patent No. 6,504,292). Hori was further combined with Applicant's admitted prior art (AAPA) to reject claims 97 and 98. The Applicants respectfully traverse these rejections.

The claims 73-78, 87, 89-92 and 97-98 are believed to be patentable as they depend directly or indirectly from presumably allowable claims 69 and 94. Furthermore, it is respectfully submitted that Hori does not teach or suggest the subject matter claimed by the Applicants, and the secondary references, Iwasaki, Takai, Choi and AAPA do not obviate the deficiencies of Hori. Applicants respectfully submit that all dependent claims now pending are in condition for allowance.

**New Claims**

As noted above, the Applicants hereby add new dependent claims 100-105. These new claims recite a variety of features missing from the cited references, taken alone or in hypothetical combination.

For example, claims 100 and 103 recite "a first shape and alignment of the plurality of substantially rod-shaped structures substantially conforms to a second shape and alignment of the plurality of substantially cylindrical channels." As illustrated in FIGS. 8(f) and 8(h), the oxide layer 130 of Hori is etched away to leave behind the cathode 131. For this reason, among others, Hori taken alone or in hypothetical combination with the secondary references cannot support a *prima facie* case of non-patentability of claims 100 and 103.

Claims 101 and 104 recite "the plurality of substantially rod-shaped structures fills the plurality of substantially cylindrical channels and are in contact with the porous layer except for the portion that protrudes above the surface of the porous layer." As illustrated in FIGS. 8(f) and 8(h), the oxide layer 130 of Hori is etched away to leave behind the cathode 131. For this reason, among others, Hori taken alone or in hypothetical combination with the secondary references cannot support a *prima facie* case of non-patentability of claims 101 and 104.

Claims 102 and 105 recite "the plurality of substantially rod-shaped structures comprises a material different from that of the substrate." As illustrated in FIGS. 8(e) and 8(h), the cathode 131 is merely a part of the substrate 121. In other words, the substrate 121 and the cathode 131 are a single structure formed by a single material. For this reason, among others, Hori taken alone or in hypothetical combination with the secondary references cannot support a *prima facie* case of non-patentability of claims 102 and 105.

**Conclusion**

In view of the remarks and amendments set forth above, Applicants respectfully request allowance of the pending claims. If the Examiner believes that a telephonic interview will help speed this application toward issuance, the Examiner is invited to contact the undersigned at the telephone number listed below.

Respectfully submitted,

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Tait R. Swanson
Reg. No. 48,226
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545